IN THE CLAIMS

1. (Currently Amended) A method of managing power in a processing system, comprising:

providing a single global maximum power consumption bound for a plurality of groups of devices within said processing system;

determining [[an]] associated local maximum bounds of power consumption, one for each of [[a]] said plurality of groups of devices ~~within said processing system~~, wherein a sum of said local bounds is less than a global maximum power consumption bound ~~for said processing system~~;

communicating each local maximum bound to an associated one of a plurality of local controllers coupled to said associated group of devices;

within each of said associated local controllers, second determining power management states for each device within each of said associated group[[s]] of devices ~~within said associated local controller~~ consistent with said associated local maximum bound, whereby said global maximum power consumption bound is met by meeting all of said local bounds; and

setting said power management state of each device in each of said plurality of groups from each of said associated local controllers.

2. (Original) The method of Claim 1, wherein said local controllers are memory controllers, said devices are memory modules, and wherein said setting sets a power management state of each of said memory modules from an associated memory controller.

3. (Original) The method of Claim 1, further comprising evaluating a usage of each of said devices by said device controller in order to determine whether or not said usage of

each device has fallen below a threshold, and wherein said second determining determines said power management settings for each particular device in conformity with said measured usage for each particular device.

4. (Original) The method of Claim 1, wherein each of said local controllers includes a storage containing an access queue for each of said associated devices, and wherein said second determining determines said power management settings for each particular device in conformity with a number of accesses queued for each particular device.

5. (Original) The method of Claim 1, wherein said processing system includes multiple processing locales, wherein each of said local controllers is a power management controller for an associated processing locale, whereby said second determining and said setting control the power consumption of each of said multiple processing locales in accordance with meeting said global maximum power consumption bound.

6. (Original) The method of Claim 1, wherein said setting sets power management states of said processing locales including a shutdown state of said processing locales.

7. (Original) The method of Claim 1, further comprising:

third determining an associated local minimum bound of power consumption for each of a plurality of groups of devices within said processing system; and

communicating each local minimum bound to an associated one of a plurality of local controllers coupled to said associated group of devices, and wherein said second determining further determines power management states for each device within each of said groups of devices within said associated local controller consistent with said associated local minimum bound, whereby

changes in power consumption of each of said groups is limited to avoid excessive current spikes within a power distribution network of said processing system.

8. (Currently Amended) A processing system, comprising:

a processor;

a memory coupled to said processor for storing program instructions and data values;

multiple device controllers coupled to said processor;

a plurality of groups of controlled devices, each group coupled to an associated one of said device controllers, wherein said controlled devices have multiple power management states, and wherein said device controllers each include a command unit for sending commands to said associated devices, whereby said devices are power managed by said associated controller, and wherein said program instructions include program instructions for

receiving a single global maximum power consumption bound for said plurality of groups of controlled devices;

determining [[an]] associated maximum local bounds of power consumption, one for each of [[a]] said plurality of groups of devices ~~within said processing system~~, wherein a sum of said maximum local bounds is less than a global maximum power consumption bound ~~for said processing system~~,

communicating each associated maximum local bound to an associated one of a plurality of local controllers coupled to said associated group of devices, wherein said device controllers include control logic for determining power management states for each device within said associated group of devices consistent with said associated maximum local bound, whereby said global power consumption bound is met by meeting all of said maximum local bounds, and wherein said device controller further comprises a command unit for setting said determined power management state of each associated device.

9. (Original) The processing system of Claim 8, wherein said device controllers are memory controllers, said devices are memory modules, and wherein said command unit sets a power management state of each associated memory module.

10. (Original) The processing system of Claim 8, wherein said device controllers further comprise evaluators for evaluating a usage of each associated device in order to determine whether or not said usage of each device has fallen below a threshold, and wherein said control logic further determines said power management settings for each particular device in conformity with said measured usage for each particular device.

11. (Original) The processing system of Claim 8, wherein said device controllers further include a storage containing an access queue for each of said associated devices, and wherein said control logic further determines said power management settings for each particular device in conformity with a number of accesses queued for each particular device.

12. (Original) The processing system of Claim 8, wherein said processing system includes multiple processing locales, wherein each of said device controllers is a power management controller for an associated processing locale, whereby said control logic determines the power consumption of each of said multiple processing locales in accordance with meeting said global maximum power consumption bound.

13. (Original) The processing system of Claim 12, wherein said control sets power management states of said processing locales including a shutdown state of said processing locales.

14. (Original) The processing system of Claim 8, wherein said control logic comprises a processor for executing local program instructions and memory for storing said local program instructions, and wherein said local program instructions comprise program instructions for determining power management states for each device within said associated group of devices consistent with said associated maximum local bound, whereby said global power consumption bound is met by meeting all of said maximum local bounds.

15. (Original) The processing system of Claim 8, wherein said program instructions further comprise program instructions for communicating an associated minimum local bound to an associated one of a plurality of local controllers coupled to said associated group of devices, wherein said control logic further determines said power management states for each device within said associated group of devices consistent with said associated minimum local bound, whereby changes in power consumption of each of said groups is limited to avoid excessive current spikes within a power distribution network of said processing system.

16. (Currently Amended) A device controller for coupling a group of devices to one or more processors in a processing system, comprising:

a command unit for sending commands to a said one or more devices;

at least one control register for receiving a local maximum power consumption bound;

a storage containing an access queue for each of said associated devices; and

control logic coupled to said at least one control register and to said storage and including logic for determining quantities of accesses queued for each of said associated devices to predict a predicted usage level, wherein said control logic is

further coupled to an input of said command unit for sending power management commands consistent with maintaining a total power consumption of said group of devices below said local maximum bound and determined in conformity with a result of said predicted usage level, whereby said device controller power manages said group of devices without intervention by said one or more processors.

17. (Original) The device controller of Claim 16, further comprising at least one other control register for receiving a local minimum power bound, wherein said control logic is further coupled to said at least one other control register for sending power management commands consistent with maintaining a total power consumption of said group of devices above said local minimum bound, whereby changes in power consumption of each of said groups is limited to avoid excessive current spikes within a power distribution network of said processing system.

18. (Original) The device controller of Claim 16, wherein said device controller is a memory controller, said devices are memory modules, and wherein said command unit sets a power management state of each associated memory module.

19. (Original) The device controller of Claim 16, further comprising evaluators for evaluating a usage of each associated device in order to determine whether or not said usage of each device has fallen below a threshold, and wherein said control logic further determines said power management settings for each particular device in conformity with said measured usage for each particular device.

20. (Original) The device controller of Claim 19, wherein said control logic further ~~comprising a storage containing an access queue for each of said associated devices, and wherein said~~

~~control logic further determines said power management settings for each particular device in conformity with a~~ compares said quantity of accesses queued for each particular device with a predetermined threshold to determine said power management setting for said each particular device.